Plastic surgeon leads front-line fight against Ebola

BY MIKE STOKES

Thomas Crabtree, MD, is no stranger to dangerous parts of the world. Over the course of a 24-year military career, he spent a great deal of time in conflict zones, including Iraq and the former Yugoslavia, treating the types of war injuries on which the foundation of plastic surgery was formed.

Yet despite his retirement from the U.S. Army in 2008, Dr. Crabtree recently found himself back in a hot zone – this time a battlefront in West Africa in the midst of the worst Ebola outbreak in history – where he would lead a multinational team of medical ground troops in Liberia to get multiple Ebola treatment centers up and running.

"The whole endeavor was, quite honestly, a war-type effort that was all based on logistics – getting as much people, stuff, expertise and energy downrange as you could," says Dr. Crabtree. "It took a big commitment and a lot of money – more than any one country or one group could do."

Dr. Crabtree arrived in Liberia's capital city, Monrovia, last September to begin laying the groundwork for the treatment centers. The project was a joint effort between the company he had started after retiring as a colonel from the Army, and the U.S. Agency for International Development (USAID) – the government agency established by the Kennedy administration to provide humanitarian services to impoverished areas of the world (while the United States took the lead in Liberia, the United Kingdom and France provided support in Sierra Leone and Guinea, respectively).

The goal of the effort was to treat the infected and contain the spread of the virus while alleviating pressure on existing Ebola treatment facilities operated by the Liberian government, Doctors Without Borders, the International Medical Corps and other organizations to handle what many feared could escalate to as many as 200,000 cases of Ebola in the region.

"People were literally dead in the streets," he says of his arrival to Monrovia. "The American population wasn't really yet up to speed on how bad things were."

That would change on Sept. 20 when a Liberian man who had traveled to Dallas was admitted to Texas Health Presbyterian Hospital with the first case of Ebola diagnosed in the United States. International airports were quickly placed on high alert for travelers arriving from the Ebola hot zone, and volunteer health-care workers returning home were subjected to quarantines.

The pandemic had spread rapidly by the time Dr. Crabtree left his position as a staff plastic surgeon with Hawaii Permanente Medical Group to return to Monrovia in December – this time for a four-month stretch as the new Ebola treatment centers began to open their doors.

Despite all the critiques and finger-pointing about the early days of the response, one thing is clear and indisputable: When the world finally did get its ass in gear, the global community rocked. Things got done. ETUs were built in the middle of nowhere seemingly overnight.

– ASPS member Thomas Crabtree, MD from his blog "Thoughts from the Hot Zone"

ASPS member Thomas Crabtree, MD, Kailua, Hawaii (top), at an Ebola Treatment Unit (ETU) in Liberia; the "Survivor Wall" (above) features the handprints of patients at an ETU offered hope to incoming patients and celebrated those who left as survivors of the Ebola virus.

Treating everyone

The painstaking protocol for diagnosing Ebola required taking temperatures and obtaining symptoms and exposure histories. Those who met what Dr. Crabtree admits were very broad criteria for a "suspect case" were admitted.

"The bar was pretty low because nobody wanted to miss anything," says Dr. Crabtree. "The great majority of people even at the beginning – and still today – were not Ebola patients; they were malaria patients, they were infectious diarrhea patients – all common conditions in West Africa, but they got treated. One of the protocols was treating every patient that came in for malaria and infectious diarrhea because it was so common."

Until a rapid Ebola test was approved for use by the World Health Organization in February, treatment was further complicated by long waits – ranging from one to three days – for labwork to confirm the presence of the virus in a sick patient.

"You treated suspect cases like they were Ebola, but you couldn't know for sure," Dr. Crabtree says.

If you're wondering at this point what a plastic surgeon is doing leading dozens of doctors and nurses – as well as hundreds of non-clinicians scattered throughout the farthest reaches of Liberia – in the midst of a deadly viral outbreak, you are not alone. Dr. Crabtree says it's the first question everyone asks – and the first question he asked himself.

"I wasn't being asked to be an Ebola expert – none of us really knew anything before this crisis began, but we've all learned a lot in the past several months," he admits. "It's very much protocol-driven care, and the protocols themselves were actually refined and continue to be refined as we speak. My job was organization, engagement and problem solving – something plastic surgeons are good at.

"My time in the bubble suit was quite limited," he adds. "I had to be involved in the training efforts and I had to occasionally do rounds and the like, but my daily activity was not at the same risk as the nurses and docs and hygienists who were in the hot zone every day. My teammates are truly some of the finest docs I've met anywhere. Their skills and professionalism and selflessness remind me daily why our profession remains respected after millennia."

If you're a believer in destiny, serendipity or simply being in the right place at the right time, however, there's a strong argument to be made that there may have been no physician on the planet better suited to lead this effort in Liberia than this pastic surgeon from Hawaii. Dr. Crabtree had been unwittingly preparing for this mission throughout his professional life beginning with his medical training in San Francisco – at a time when another deadly blood-born virus, HIV, was reaching epidemic status – to his military role in medical diplomacy efforts and entrepreneurial streak that led to him building a primary care clinic in the country just months before anyone, including him, thought the Ebola outbreak would amount to little more than a short-lived flare-up.

Business opportunity

The Ebola project was actually Dr. Crabtree's second foray into Liberia. Shortly after retiring from the Army, he opened a private practice in Hawaii and also launched a side business as the U.S. affiliate of Aspen Medical, an Australian firm that specializes in providing health-care solutions to remote areas.

In March 2014, just as the Ebola outbreak was beginning to take root in West Africa, Dr. Crabtree's company made the decision to build a comprehensive primary-care clinic in Monrovia to provide Western-style care for the growing population of multinationals from embassies and businesses that had moved back into the resource-rich country following the end of a particularly gruesome civil war during the 1990s through the early 2000s.

During a meeting with the company's board of directors to determine whether to invest the capital to move forward with building the clinic, one of the directors asked Dr. Crabtree – the only physician on the U.S. board – whether they should be concerned about the early reports of Ebola cases cropping up in the country.

"I remember answering like it was yesterday," Dr. Crabtree recalls. "I said, 'No. It usually burns out. I wouldn't worry about it at all.' I couldn't have been more wrong."

The success of that clinic ultimately led to the contract for the Ebola treatment centers with USAID.

"We took over a failing clinic and rebuilt it into what is now far-and-away the best health care in Liberia," he says. "When it came time again to pull people together to build the Ebola treatment centers, USAID put two and two together knowing that we were associated with this clinic as well as with previous larger efforts and had a global footprint."

Dr. Crabtree had previously worked with USAID in the 2000s while running a section of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) program, a foreign-policy initiative of the Bush administration to treat and prevent HIV on a global scale, particularly in countries where military hospitals and personnel were at risk of exposure.

"That was probably the biggest reason I was asked to run this initiative," Dr. Crabtree says. "One of our partners in that effort was USAID, which was a partner in this Liberian effort as well."

Prepared for the worst

To build the Ebola treatment centers, Aspen Medical partnered with PAE, a global construction and logistics company based in Virginia, to construct dozens of treatment centers. Thankfully, the number of cases began to wane by December and less than a dozen centers were needed.

"Nature really gave us a break in December and things didn't continue to exponentially grow," Dr. Crabtree says. "That was about the time most of the centers were set up, so there was enough capacity in place to where some places got no Ebola patients, others got a few, and some places continue to stay busy. There was never a situation like there was in October when Doctors Without Borders opened up one of their sites outside of Monrovia and there were 50-100 people coming in each day."

He says that by mid-January, there was a feeling that the tide had turned and the virus was being contained.

"I can't pinpoint temporally when that was, but some point early on it became apparent that there was a lot of time, energy, money, stuff and expertise being brought to bear, and, at least in Liberia, we were ahead of this thing," Dr. Crabtree says. "It wasn't just me – everybody shared in that to some degree. Whether it was that the world stepped up, especially our own country and the American people, which directly affected the numbers, or whether nature just decided to give us a break, who can tell? But there certainly was a time where everybody went, 'OK, this is going to work.'"

Treating patients

In spite of the medical team's successes, however, the virus's ferocious death rate took an emotional toll.

"Even in the best of settings with the best of care in any of the countries in West Africa, many of the big centers still reported 30-40 percent mortality," says Dr. Crabtree. "Obviously, if you do nothing, the particular strain can be 80-95 percent fatal, so it's a huge improvement, but when you still have 30-40 percent of the people die, that's extraordinarily frustrating as a clinician. And that wasn't unique to me. That's something all the clinicians shared."

On a personal level, the outbreak kept Dr. Crabtree from being able to return home to attend the funeral of his mother, who passed away in February.

"We had said our goodbyes already – she had lung cancer and I spent a lot of time with her before I left – but that was really difficult," he says. "My mom, god love her, we both knew it might happen and she was very comfortable with that. Me, not so much – but she was. Moms are special."

Even if travel in and out of Liberia hadn't been limited – there was typically one flight per week – Dr. Crabtree says his presence at his mother's service could have done more harm than good, with stateside anxiety surrounding Ebola running high.

"It was the cold and flu season in Massachusetts," he says. "Can you imagine, here comes the guy from Liberia hugging everybody and shaking hands – the usual funeral etiquette – and two days later people start to get the sniffles or a cold and fever?"

Liberia's last case of Ebola was confirmed March 20, and Dr. Crabtree returned home to Hawaii a week later. Though concerns over the spread of Ebola have faded as monitoring and containment has progressed rapidly with scientifically appropriate screening at major airports, Dr. Crabtree says his return home has been an adjustment.

"Gone are the days of the silly quarantining people in the bubble suit," he says. "But still, there are people here in Hawaii who aren't ready to say 'hi' or be face-to-face yet."

He understands their reticence.

"From people's interaction with me to people's interaction with Ebola survivors, the similarities between Ebola and HIV in terms of stigma continue to strike me," Dr. Crabtree says. "Despite all the best educational efforts and people doing a great job to try not to do that, it's human nature: You have been exposed to something that can really bite me badly, so it's natural to avoid."

Even in the medical community, Dr. Crabtree says a good deal of misunderstanding remains regarding the science behind it and the lack of a vaccine.

"Remember, we still don't have a vaccine for HIV – or a cure," he says. "We just have very good anti-retrovirals. My guess is there will be a vaccine. Will there be an antiviral that is curative like an antibiotic? I don't know. Probably not. But that's beyond my scientific abilities."

(Clockwise from top) Clinical personnel receive "bubble-suit" training at an ETU; tents house clinical staff; inside the staff barracks; Dr. Crabtree grabs a quick nap aboard a Russian Mi-8 helicopter; view of an ETU outside of Monrovia.

Market day in Monrovia (above); a public-education poster (right) illustrates symptoms of Ebola and instruct how to get help.

Picking up the pieces

At *PSN* press time, Dr. Crabtree was preparing for one final return to Liberia – this time for six weeks beginning in late April – to help wind down the effort, repurpose the remaining equipment and supplies, and transfer operations to the Liberian government.

"While all the people who aren't Liberian will go back to their day jobs around the world, the physical assets that are there – the tents, buildings, generators, vehicles and medicine – can easily be put to great use," says Dr. Crabtree.

And for now, in Liberia at least, it appears as if the fight is over, the battle won.

"We're just one piece of the puzzle, but it's safe to say that Liberia has won the battle, if not the war, in terms of Ebola," Dr. Crabtree says. "But I don't think anyone is convinced that Ebola is gone forever; it's probably endemic, hiding out somewhere – perhaps even in humans, which we're just not picking up – but certainly it remains in its natural reservoir, which is probably the fruit bat, although nobody is exactly sure."

Dr. Crabtree is also quick to praise the Liberians themselves for halting the spread of Ebola.

"The reason Liberia was the first country to emerge from the crisis is because Liberians were fantastic about establishing the proper Ebola etiquette," he says. "They were uniform in their ability to make sure everybody got the message of what to do and what not to do – and those are things that mattered. They really are an amazing people that deserve all the credit for all the success in beating the disease."

And though treating world pandemics may not be the most obvious fit for a plastic surgeon, Dr. Crabtree says it shows yet another aspect of an incredibly versatile specialty.

"Many plastic surgeons seem to think that if he or she is not a cleft lip expert, there is no international role for them – which is silly," he says. "Plastic surgeons are the utility infielders. We can do a little bit of everything. We're surgeons, so we can take care of patients in general. We can figure out problems. We do wound care better than everybody, which every place needs.

"I would have loved to have had a half-dozen plastic surgeons on the team at various sites simply because they are good, solid docs who tend to be extraordinarily good with people," he adds.

It's a formidable skill set that has value anywhere and everywhere in the world. PSN

For more on Dr. Crabtree's experience, visit his blog, "Thoughts from the Hot Zone" at thoughtsfromthehotzone.blogspot.com.